Bathers Bay Whaling Station, Fremantle, Western Australia

JACK McILROY

In 1984 the Western Australian Museum carried out test excavations on the site of the whaling station at Bathers Bay, Fremantle. Shore-based whaling was an important early industry in Western Australia, and the Bathers Bay station operated from 1837 to around the 1860s. It was owned by the Fremantle Whaling Company and was one of some fifteen whaling stations which were eventually to operate along the Western Australian coast. Excavations revealed the tryworks to be largely intact. Traces of the whalers' warehouse and of a substantial building, possibly their boatshed or workshop, were also uncovered, as were walls and floors of Mews Boatshed which operated in the area from about the 1860s. No trace of the whalers' jetty was found. The site is located on the shore-front in central Fremantle, in an area due for major redevelopment prior to the Bicentennial in 1988. The author is a consultant archaeologist working in Western Australia.

1. INTRODUCTION

The area known as Whalers Beach or Bathers Beach lies immediately to the east of Arthur Head, Fremantle (Fig. 1), and was a location of crucial significance for the foundation of the Swan River Settlement. On 2 May 1829, Captain Fremantle made his first landing on the mainland at Arthur Head, where he took formal possession of the whole of the west coast of what was then known as New Holland, on behalf of the British monarch. The first encampment was established close in the lee of Arthur Head and later the town of Fremantle extended eastward. The colony's first gaol, the Round House, was built at Arthur Head in 1830 to the design of the civil engineer, Mr H. W. Reveley.[1]

2. HISTORICAL RECORD

Two whaling companies were formed in Western Australia in 1837: the Fremantle Whaling Company based at Bathers Bay and the Northern Fishery, also known as the Perth Fishery, which had its station on nearby Carnac Island.[2] By restricting their activities to bay-whaling from a fixed shore base, the companies required:

> 'relatively small amounts of capital for the provision of four to six boats, try-pots for boiling down the catch, rough huts for cooperage and boiling, and the payment of wages, partly in the form of provisions and rum, for sixteen to twenty men. As the more valuable sperm-whales frequented the deeper waters further off-shore, the whaling catch was confined mainly to the slower moving right-back whales, which were less valued for their oil, but had large palates with bones that were used as the basis of corsetry, umbrella and millinery industries in England.'[3]

High profits were anticipated and the first year of operations was promising. An export revenue of 1780 pounds was realised from a total 71 tons of oil and 4½ tons of bone produced by the two companies. This was 200 pounds greater than the colony's export revenue from wool.[4] In February 1838, however, the Perth Fishery ceased activities. This was due largely to crew inexperience, company mismanagement, the high cost of operations and the difficulty of acquiring replacement supplies made necessary by accidents in nearby Cockburn Sound.[5] The Fremantle Company continued to operate in 1838 and 1839, with export of whale products returning 3380 pounds and 3170 pounds respectively in each year. However, a drastic decline in overseas bone and oil prices in 1840 led to its closure[6] and the dispersal of its assets. Its warehouse (the Station House) and jetty were leased to harbourmaster Daniel Scott[7] and its whaleboats were deployed as ferries on the Swan River.[8]

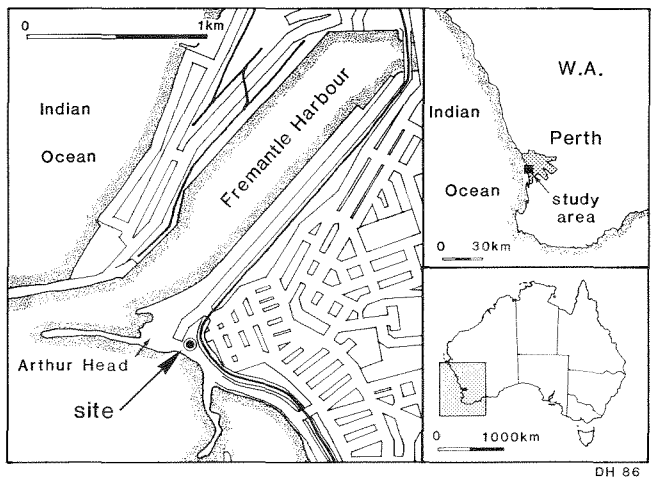


Fig. 1: Site location.

Three years were to elapse before higher overseas prices made the resumption of whaling operations viable.[9] The re-opened Fremantle Company was joined by several smaller enterprises in the mid-1840s: Cheynes Whaling Station at Albany, Child's at Bunbury, and smaller organisations at Vasse and Augusta in the south-west with finance coming largely from single individuals. The result was that from 1844 to 1850 export revenues from whaling of 4000 pounds to 5000 pounds were the norm.[10] Eventually, some fifteen whaling stations were to operate on the Western Australian coast, from the Recherche Archipelago in the south to the Dampier Archipelago 1000km north-west of Perth.[11]

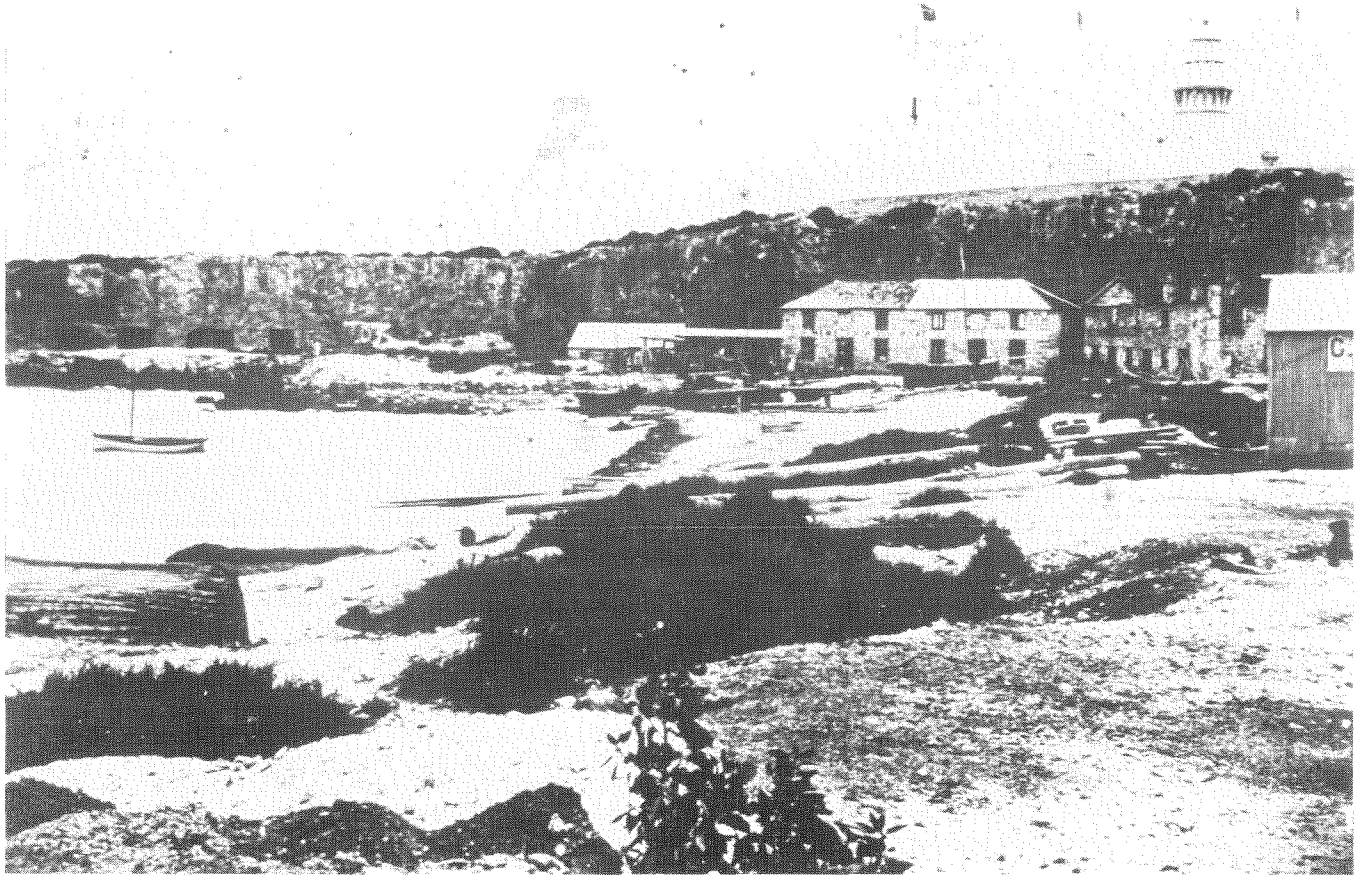
Fig. 2: Bathers Bay whaling station c.1840. Sketch by Horace Samson. Whaling jetty at left, boatshed at centre, Station House near tunnel.

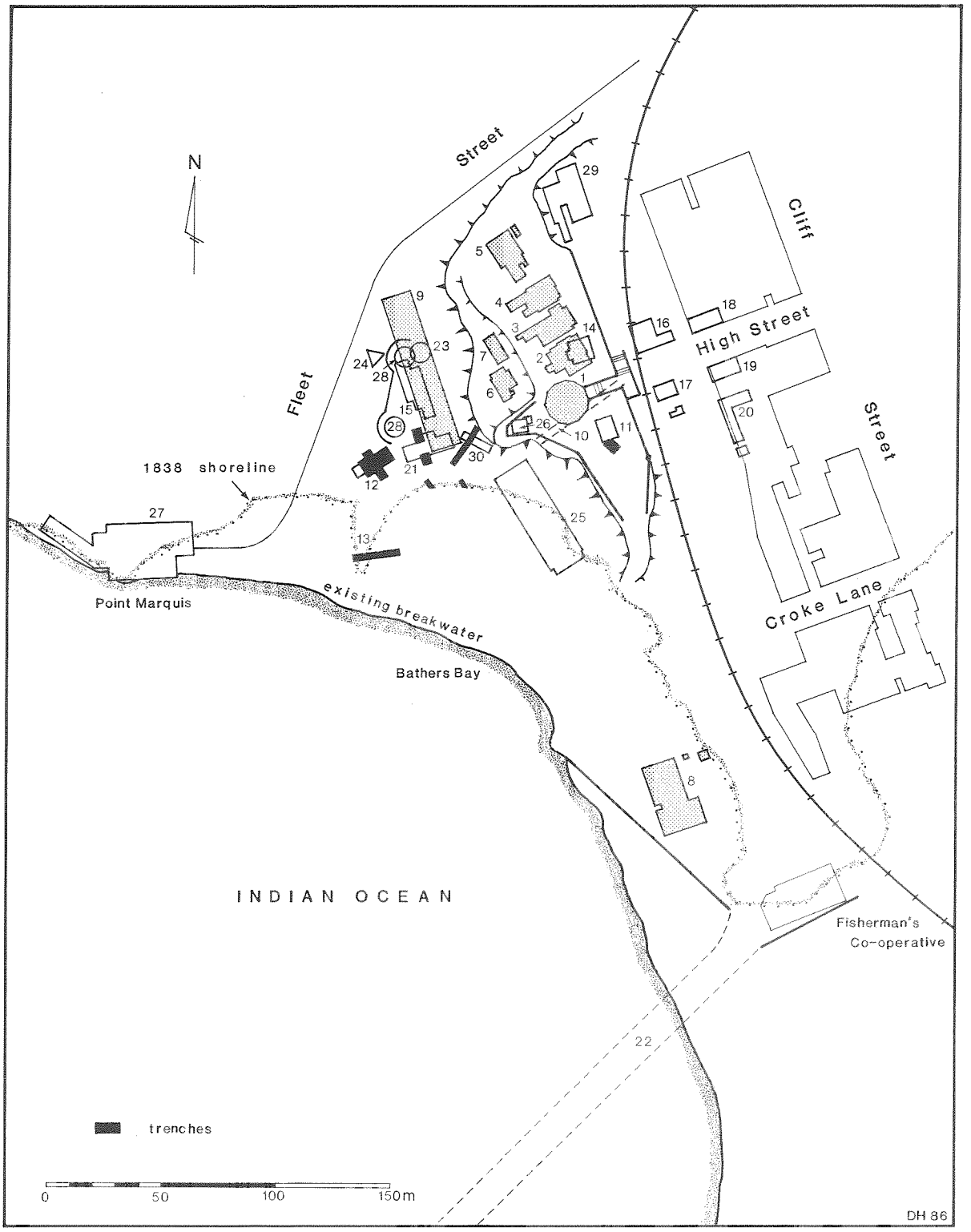
The development of the petroleum industry contributed to a general decline in whaling activity in the 1860s and this is reflected in the scarcity of newspaper reports on the subject in that period. One such report, lamenting the days when a regular whaling station was kept up at Fremantle, appeared in the *Inquirer* in October 1865.[12] The date at which whaling operations ceased entirely at Fremantle is unknown but was probably not long after this.

A sketch of the whaling station, drawn by Horace Samson[13] in about the 1840s (Fig. 2), shows a boatshed containing a whaleboat and a two-storey warehouse set up against the 15-metre-high cliff face. A rough stone and wood breakwater-jetty, equipped with a derrick and a windlass for heaving whale carcasses or blubber ashore, is visible. The tryworks are not seen, although what appear to be trypots lie close to the boatshed. To the right of the Station House is the entrance to the whalers' tunnel. This was constructed by the Fremantle Whaling Company to provide quicker access from the jetty to High Street, Fremantle. Using the services of Mr Reveley and the labour of prisoners from the Round House, the 57m-long[14] tunnel was cut in five months through rock that, although solid enough to bear any weight in its natural state, was capable of being cut with a broad axe and pick.[15] The work was completed in January 1838. It is possible that a detachment of miners and sappers, who were stationed in Fremantle at the time, may have assisted in the construction.[16] Little is known of the Station House, other than that it was to be 50 feet in length, 16 feet wide and 16 feet in height (15.25 by 4.88 by 4.88m) according to a tender advertisement in the *Perth Gazette* in February 1838.[17]

Samson's sketch is complemented by a description of the Bathers Bay area in 1837, given by a visitor who recorded his impressions in a letter to the *Perth Gazette*:

Fig. 3: Bathers Bay c.1870s. Mews boatshed is at right centre, with the ruins of the Station House to its right. Photograph by courtesy of West Australian Newspapers (Hist. 145).





'Arriving at Fremantle, my steps were naturally directed, in the first instance, to Arthurs Head for the purpose of seeing the Whales . . . I descended the sloping ridge towards the old Court-house and reached the small bay at its rear, in which, at its north western extremity, I observed an active scene of preparation going on by a number of prisoners, and other labourers, blasting and carrying rock for the construction of a jetty. This jetty is already projected into the sea about two thirds of the intended length—twenty-five yards [22.9m]; besides a considerable extent of esplanade or wharf, completed on the beach at its base. The work is done in a

Fig. 4: Composite map locating Bathers Bay whaling station in relation to present cliff and to the Round House, with excavation trenches shown. Map by R. McK. Campbell and M. Pearson. Key to numbers as follows: Existing: *1: Round House 1831. 2–5: pilots' cottages 1904. 6: District Gunner's cottage 1905/6. 7: Artificer's store 1909. 8: pottery 1880. 9: Fremantle Port Authority workshop 1970. 10: whalers' tunnel 1837.* Demolished: *11: first courthouse 1834/5–1873. 12: tryworks shed 1837–? 13: whalers' jetty 1837–1870. 14: second courthouse 1840–1903. 15: lighthouse No. 1/flag room 1850–1904. 16–20: Police Station complex 1852–1890. 21: Mews boatshed 1856–1945. 22: Long Jetty 1873–1921. 23: lighthouse No. 2 1876–1905. 24: time ball 1899–1905. 25: fruit shed 1900–1974. 26: Signal Station 1902?–1930. 27: power house 1904–1961. 28: Fremantle Battery 1905/6–1966. 29: government cottage 1856–1966. 30: Station House 1837–?*

substantial and masterly style; the breadth of the jetty at the extremity seaward is about twenty feet [6.1m] and is sufficiently elevated above high-water mark. At the extremity of the work already completed, a stout beam or post is inserted into the body of the jetty, to which is to be attached the tackle for hauling, turning, and securing the carcase. Several trypots, and other implements were scattered about, with a quantity of bricks for the construction of fireplaces: and a ready shelter is offered for the working party by a natural cavity in the cliff, which can easily be enlarged.'[18]

The presence of a whaling station so close to the town was not always welcome. The *Perth Gazette* in October 1837, complained that:

'The inhabitants of Fremantle must, in the course of another year, experience much inconvenience and unpleasantness from the establishment of a whaling station so near the town, and it will unquestionably become a source of great complaint when the population is more extended, more especially if it is comprised of numbers not immediately interested in the produce of the deep. It is idle to disguise the fact that so close a neighbourhood to a slaughter-house is a serious nuisance; if the season should be protracted into the summer months, it would be intolerable.'[19]

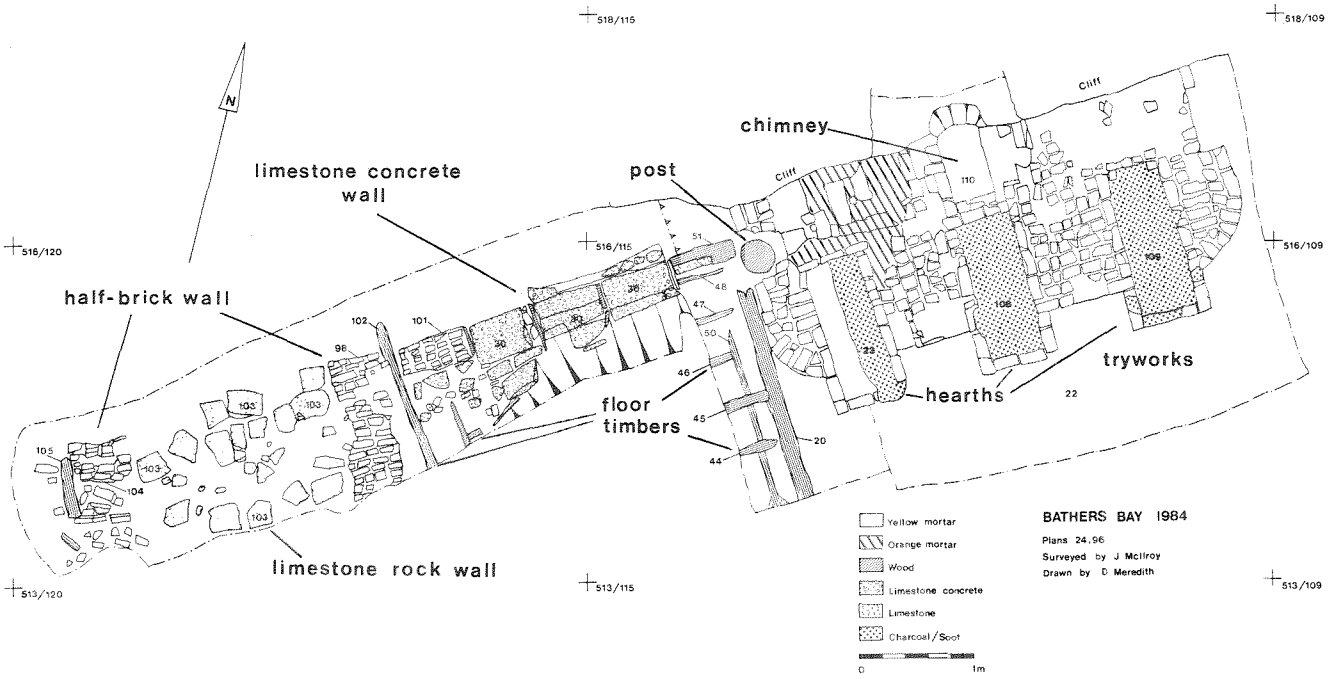
Later in the 19th century, Bathers Beach developed as a boat-building centre. A photograph of the area taken around the 1870s[20] shows several slipways, a large two-storeyed building bearing the inscription 'C.W. Mews Ship and Boat Builder' (the 'C' is not clear and could be 'T'), a boatbuilding shed, several boats ashore and afloat, and the breakwater-jetty (Fig. 3). The jetty is known to have survived until about 1870 when the piles were taken up probably because they were a hazard to shipping. Despite over 30 years immersion in water, the timber of the piles was found to be sound and free from insect infestation.[21] The piles may have been reused in other buildings around Fremantle. The Station House, by now fallen into disrepair, can be seen to the right of the Mews building in the c.1870s photograph. The entire area was later consolidated and extended, with the cliffs being substantially cut back, particularly north and west of the whalers' tunnel, and the resulting limestone rubble being used as landfill. As a result, the whalers' tunnel was reduced to its present length of 45m.

3. ARCHAEOLOGICAL INVESTIGATIONS

Planned redevelopment of Arthur Head, scheduled for completion by 1988, raised the possibility of the destruction of important archaeological material. The research project discussed in this paper aimed to confirm the historical record by testing the site for archaeological remains and consequently defining the limits of areas of historical interest which should be avoided by developers. It was carried out by the Western Australian Museum in the winter of 1984, under a grant from the Commonwealth Government's National Estate Programme and with the assistance of Fremantle City Council and the Fremantle Port Authority.

The Arthur Head area had previously been surveyed by architect, R. McK. Campbell.[22] On the basis of an 1838 plan provided by the Western Australian Lands and Surveys Department,[23] he produced a composite map relating historical features to the current topography. This permitted the trial

Fig. 5: The site of Bathers Bay whaling station from the south-west. The tryworks trench is arrowed. High Street, Fremantle, is at upper right, above the Round House. Fremantle Harbour at upper left, on the Swan River. Note the entrance to the whalers tunnel below the Round House. Sea is in foreground. Taken from a height of about 200m at midday, July 1984, courtesy Channel 9 Television News helicopter. Photograph: Pat Baker.



trenches to be located with a high degree of accuracy. Campbell's map has been combined with a plan of the area drawn by consultant archaeologist Mike Pearson[24] to produce Fig. 4, on which the locations of the archaeological trenches have been marked.

The condition of the site during excavation can be seen in Fig. 5. This aerial photograph was taken with the assistance of the Perth Channel 9 Television News helicopter. The area was being used as a storage facility for unwanted machinery

Fig. 6: Plan of tryworks and adjacent building. Key to numbers as follows: 20: floor timber. 22: crushed limestone layer. 23: hearth. 30: limestone concrete wall. 44–48 & 50–51: floor timbers. 98 & 101: half-brick wall. 102: floor timber. 103: limestone rock wall. 104: half-brick wall. 105: floor timber. 108 & 109: hearths. 110: chimney.

Fig. 7: Oblique view of tryworks from the south-west. 1830s cliff remnant at top, floor timbers of adjacent building at lower left. Scale in 10cm divisions. Photograph: Pat Baker.

and building material associated with the Fremantle Port Authority's daily activities. With the co-operation of the Fremantle Port Authority, selected areas were cleared. Initially, trenches 1.5m wide were sunk over the likely locations of the tryworks, Station House, jetty, and Mews boatshed, and extended as necessary. The site was soon seen to possess an uncommon feature in terms of Australian colonial excavations. Up to 3.5m of complex stratigraphy covered the 19th-century structures, a result of the Arthur Head cliffs having been blasted away and used as landfill as well as being employed as building material. The stratigraphic sequence above both the tryworks and the Station House, showed a complexity more usually seen in a site of a greater antiquity and longer occupation than one dating only from the 1830s.

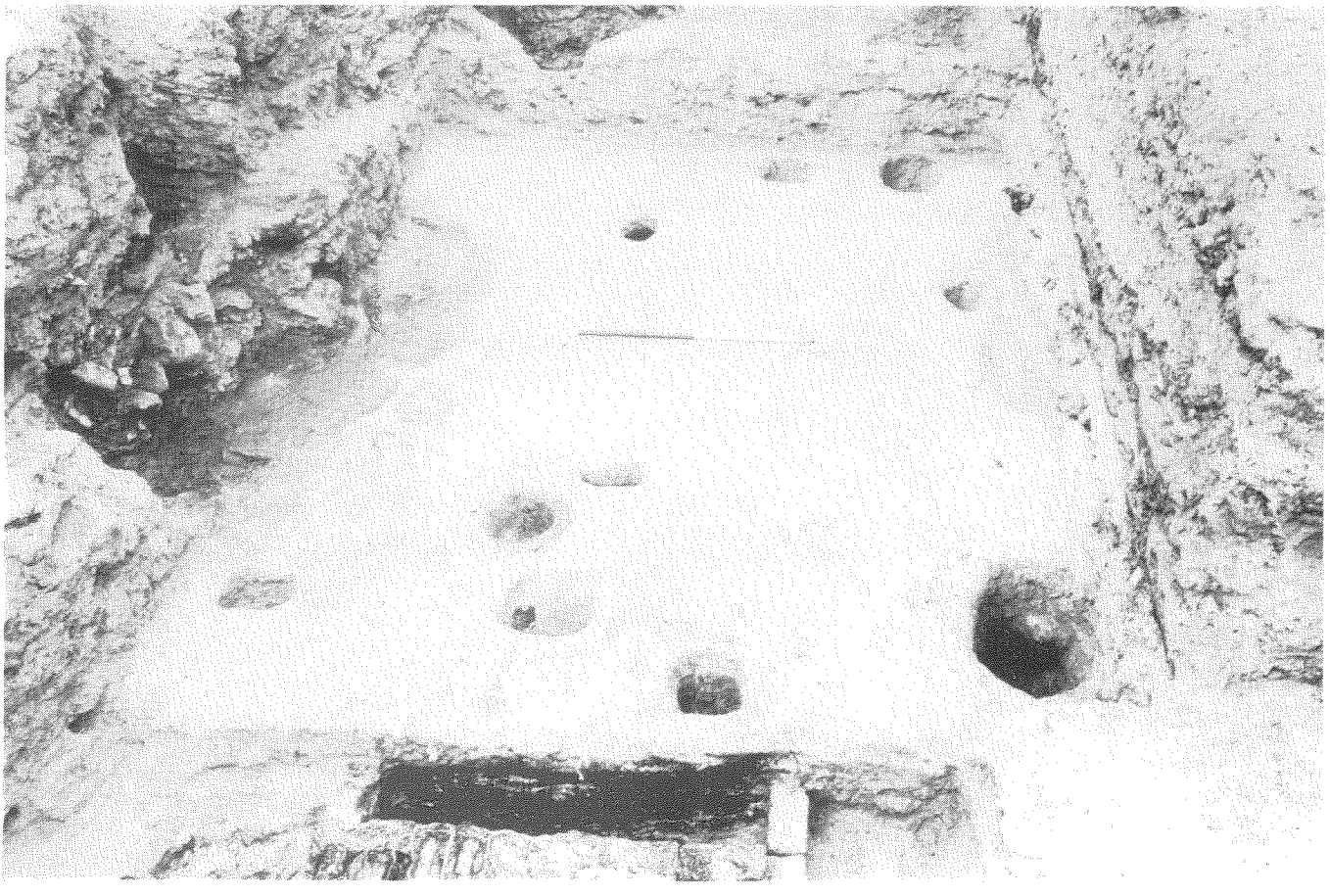
3.1 The tryworks

The tryworks was revealed to be a brick structure comprising three hearths and a presumed central chimney (Figs 6 & 7). It was built flush against the 1838 cliff face. This cliff line was still extant, standing to a height of 110cm above limestone bedrock, which was presumed to be the old cliff base. The three hearths were filled with a sooty residue dating back to their period of use. Half of this deposit in the westernmost hearth was excavated. When a 780g sample was analysed by Dr Ian D. MacLeod of the Conservation Department of the Western Australian Museum, the deposit was found to consist of sand, charcoal, soot and degraded/oxidised fats and oils. The charcoal fragments appeared to consist primarily of the local timber *Eucalyptus marginata*, popularly known as Jarrah. Attempts to identify the precise composition of the residual fats and oils were hindered by the nature of the sample, as the oily residue accounted for less than 1 per cent of the material by weight and the material was largely polymerised and cross-linked. The analysis by gas liquid chromatography of the esterified extracts confirmed the existence of a range of poly-unsaturated fatty acids in the original material. The average retention times of the methyl esters were typical of the materials that would be present in whale blubber. It was not possible to differentiate the residual material sufficiently to establish what type of whale blubber had been processed at the site.

Two types of brick had been used in building the tryworks, red which seems to have been of local origin, and yellow which is likely to have come into the colony as ships' ballast and could have originated from eastern Australia, the United Kingdom, South Africa or elsewhere. It is possible that the yellow brick was intended for use in ovens, furnaces, or fireplaces and is of a special heat-resistant type. This has not yet been investigated. The brickwork was held together by a yellow limestone mortar, with patches of a distinctly different orange mortar also in evidence. The latter was observed particularly in the north-west corner of the tryworks, where it may overlie what could be another chimney base. No evidence remained of the trypots or of any tools associated with the boiling down of whale blubber. This is not surprising in view of the urban location and continuous use of the site from the 1830s to the present day. Evidence of this use was seen in the stratigraphic sequence above the tryworks, of at least eight separate instances of land filling interspersed with four building phases. The building phases were indicated by two sequences of postholes and two floor surfaces of what appeared to be rammed and pounded limestone (Fig. 8).

An unexcavated layer of crushed limestone surrounds the tryworks at about the top level of the remaining brickwork. Forming a fairly horizontal surface, it may be an occupation layer associated with use of the whaling station or it may be a later destruction layer. Further evidence of occupation material associated with later building phases is scant. How-

Fig. 8: Later building phase overlying the tryworks. Postholes in a rammed limestone surface. View from the west. Scale in 50cm divisions. Photograph: Pat Baker.



ever, a layer consisting of finely crushed limestone with many small brick fragments and charcoal flecking, which sealed the third landfill overlying the tryworks, was found to contain part of a clay pipe bowl with a paired oak-leaf design on the front mould line. The bowl was small, angled forwards, and the square spur carried the initials HC. This bowl was identified by Myra Stanbury, of the Western Australian Maritime Museum, as identical with those of pipes recovered from the 462-ton barque *Eglinton*, which was wrecked on the Western Australian coast some 50km north of Perth in 1852.[25] While it might be admitted that one pipe fragment does not date a deposit, this seems to suggest a date for this layer of around 1852. However, it needs to be noted that the bowl-shape recovered from this deposit was also typical of pipes manufactured in the London region at any time from about 1840 to about 1880.[26]

3.2 Associated structures

Adjacent to and west of the tryworks, a building of an unusual and varied structure was excavated (Fig. 6). Its north wall was unusual in having three different modes of construction. A 6m length of this wall was uncovered, mostly collapsed. The first 2.2m appeared to have been built from hot lime poured into wooden forms set between posts 2 feet (61cm) apart, lightly mortared and then trowelled down.[27] The next 1.2m consisted of collapsed courses of half bricks set in a yellow lime mortar, and this was followed by 2m of undressed limestone rocks. The last 60cm consisted of further collapsed half-brick walling.

With the availability of nearby limestone, bricks may have been used sparingly. The different construction methods seem to suggest several repairs or rebuilds of the structure over a period of years, with the original building possibly being the shed shown in the sketch by Horace Samson (Fig. 2). The north-west corner of the building and its southern limits were not excavated. A substantial vertical timber post about 25cm in diameter was thought to form the north-east corner-post of the building. The post-pit cut through the north-west edge of the tryworks, suggesting that the post was erected after the tryworks ceased to be used, but it was difficult during excavation to determine which layer this post-pit was originally cut through and its location could be a coincidence. In such a case, the alignment of this building in relation to the tryworks may suggest contemporary use, with the most likely function being perhaps a boatshed and workshop.

That the base of a limestone cliff is a hazardous place to work is suggested by the discovery of a retaining wall of dressed limestone blocks, built onto the 1838 cliff face behind the tryworks and running at least 19m to the east. Its original height is not known.

3.3 The Station House

The base of a rough undressed limestone wall, standing 80cm high and 80cm wide, was uncovered in a 1m-wide trench in a location which agreed with that of the east wall of the Station House on the 1838 map. Associated with this wall was a disturbed fragment of a rammed limestone floor. The condition of both wall and floor was fragile and unstable. No evidence of occupation debris existed. Pearson suggests that this building was demolished between 1891 and 1897.[28]

3.4 The whaling jetty

Although the whaling jetty piles were reported to have been removed by 1871, it was hoped that some might have survived and that at least the made-up ground for the jetty could be picked up in a trial trench. While extensive trial trenching did not unearth the jetty, the refinement of the historical maps, occasioned by our locating the tryworks and Station House, suggests that the jetty may have been located 1–2m to the west of our trenches. This can be established during future excavation.

3.5 Mews boatshed

Although of later date than the whaling station, this site was of interest. Constructed in about the 1850s, it last appears on a 1945 aerial photograph.[29] From the c.1870s photograph of Bathers Bay (Fig. 3), the boatshed was known to be immediately west of the Station House. An 1895 plan shows the building due to be converted into a temporary customs office, while a 1909 plan identifies it as an 'Old Fruit Shed falling down'.[30]

Three limestone walls separated by rammed limestone floors were uncovered between the positions of the Station House and the tryworks. The tops of these walls were less than 20cm below present ground level. Their dimensions and location indicated that if they formed part of the boatshed, then this building had been substantially renovated over the years.

3.6 The Aboriginal aspect

An unpublished report prepared for the Fremantle City Council, by Susan O'Connor and Rachel Thomson of the Centre for Prehistory at the University of Western Australia, outlined the evidence for Aboriginal use of the Arthur Head area, including Bathers Bay, during the early whaling activities. They concluded that:

> 'The whaling season saw large numbers of Aboriginal people gathering at Bathers Bay to banquet on the scraps left from the whaling activities. It is at Bathers Bay that any evidence of Aboriginal occupation is likely to be found. Aboriginal families visiting the beach on a regular basis would have carried with them artefacts, some of which would have been used and discarded at the site. As the whaling operations commenced in 1837, the artefacts used are likely to have been made both of traditional and European materials.'[31]

It is likely that Aboriginal visitors would have kept well away from the centres of whaling activities: the jetty, tryworks and the tunnel. They may have camped on the cliff-top. To the north and west of the whaling station, the cliff has long since been levelled and no archaeological evidence remains. Other likely campsites would probably have been south of a line drawn between the jetty and the tunnel under the Round House, keeping the Aborigines out of the whalers' way. Two small test-pits were sunk, along what was believed to be the southern-most limit of the shoreline in 1838. The first revealed only a homogeneous limestone rubble and sand landfill, changing to clean white sand at a depth of 2.50m below ground level, 2.22m above sea level. The second displayed a sequence of limestone rubble landfills interspersed with dumps of sand and possible industrial and building waste. A minute fragment of quartz sieved from the bottom layer of white beach sand did not appear to be an Aboriginal artefact.[32] The areas in which test-pits could be sunk were limited by time, by the distribution of Fremantle Port Authority stores on the surface which needed to be moved by machine before trenches could be opened, and by logistical and security problems involved in digging outside the Fremantle Port Authority storeyard. Future sample-pits in the area south of the whaling tunnel, east of the 1838 shoreline and west of the 1838 cliffline, may be more fruitful.

3.7 Maritime search

It is likely that the end of the whaling jetty lies under the dirt road running parallel to the present breakwater. If the jetty had been extended at some time, piles might remain underwater and there would be the possibility of finding whaling artefacts on the seabed. Following severe winter storms in 1983, Jon Carpenter, from the Conservation Department of the Western Australian Maritime Museum, dived in the area on 15 July. He discovered whale bones protruding from, and lying exposed on, the seabed. Bones were visible in several areas, mostly in the northern half of the Bay. They were

mainly ribs and occasionally vertebrae. An iron concretion poking out of a sand patch was carefully extracted and revealed to be a whaler's killing lance. On this basis, it seemed that other artefacts from the whaling period could lie under the sandy seabed.

Following the end of land excavation, a marine search was undertaken to scan the seabed for traces of the jetty and possible artefacts from the whaling period. Underwater lines were laid out, aligned with two flagged shore markers pinpointing the most likely position of the jetty. These lines were extended to a distance of 30m from the base of the breakwater and were secured with steel pitons hammered into the seabed. Problems with equipment led to the search being called off after a few hours. A deterioration in weather conditions meant a further postponment and the search could not be rescheduled owing to the prior commitments of the Museum's maritime archaeologists. A future investigation is planned when conditions and finance permit.

4. CONCLUSION

The Bathers Bay project represents the first major excavation of a whaling station in Australia. The site has a significant archaeological potential. Test excavations have provided confirmation of the historical record and added to it. The whaling tryworks and Station House have been located, as has a substantial building adjacent to the former. The likely position of the whaling jetty has been determined, as has also the probable location of Mews boatshed. Building phases post-dating the tryworks have been revealed. The line of the cliff face in 1838 and again in the 1850s to 1860s, when it had been cut back, has been picked up at several points.

Continual industrial use of the area since the 1830s suggests that few artefacts and tools associated with whaling activities will be discovered on site. While the seabed at Bathers Bay may yield such artefacts, the results of a future land excavation are more likely to increase our knowledge of the structural details of the whaling station and of the early boatbuilding industry in the area. We would also be left with significant archaeological remains, raising the question of their conservation and preservation.

The broader research potential of further excavation is perhaps of lesser consequence than the historical significance of the site and its surroundings. However, work on the remaining whaling stations on the Western Australian coast would increase understanding of how this early industry affected the State's economic development and how it perhaps contributed to the expansion of the colonial frontier along the coastline.

NOTES

1. Reveley was appointed Civil Engineer to the Colony by Governor Stirling. He arrived in Western Australia on 1/6/1829 aboard the *Parmelia*. Statham 1979: 280.
2. Heppingstone 1966: 30.
3. Statham 1981: 197.
4. ibid.
5. ibid.: 196.
6. ibid.: 197.
7. Heppingstone 1966: 32.
8. Statham 1981: 197.
9. ibid.: 205.
10. ibid.
11. Personal communication, Heppingstone.
12. *I.* 18/10/1865.
13. The sketch is part of the personal collection of Mrs Godbehear of Perth. Samson arrived in Western Australia aboard the *Sterling* on 14/3/1841 and was employed by the government as a draughtsman. Statham 1979: 290.
14. Personal communication, R. McK. Campbell, conservation architect.
15. Colonial Secretary's Office Records: Vol. 53, 64, letter from Civil Engineer Henry W. Reveley.
16. Hitchcock 1929: 25.
17. *P.G.* 3/2/1838.
18. *P.G.* 5/5/1837.
19. *P.G.* (leader): 14/10/1837.
20. Photograph courtesy of W.A. Newspapers Ltd., St George's Terrace, Perth. (Hist. 145).
21. Colonial Secretary's Office files. Letter from Clerk of Works, James Manning, to the Colonial Secretary, 10/1/1871.
22. Campbell 1984.
23. Original plan, Fremantle, 19c, Lands and Surveys Department, Perth.
24. Pearson 1984.
25. A report on the excavation of the *Eglinton* is in preparation at the Western Australian Maritime Museum, Fremantle.
26. Davey 1981: 288, Fig. 47, No. 5; Walker 1977: 1533, Fig. 4C, No. 29. Possible manufacturers of this pipe were Henry Cox, 1837–1850, and Mrs Henry Cox, 1840–1853, of Holborn.
27. Personal communication, Margaret Pitt Morris, historian.
28. Pearson 1984: 49.
29. ibid.: 54.
30. ibid.: 54–5.
31. O'Connor and Thomson 1984: 23–4.
32. Personal communication, Charles Dortch, Curator of Archaeology, Western Australian Museum.

BIBLIOGRAPHY

Published sources

DAVEY, P. (ed.) 1981. *The archaeology of the clay tobacco pipe. Vol. 1. Pipes and kilns in the London region*, Oxford, B.A.R. British Series 97.

HEPPINGSTONE, I.D. 1966. Bay whaling in Western Australia, *Journal and Proceedings of the Royal Western Australian Historical Society* 6 (5): 29–41.

HITCHCOCK, J.K. 1929. *The history of Fremantle*, published by authority of Fremantle City Council.

STATHAM, P. 1979. *Dictionary of Western Australians*, 1, University of Western Australia Press.

STATHAM, P. 1981. Swan River Colony 1829–1850, *in* Stannage, C.T. (ed.), *A new history of Western Australia*, University of Western Australia Press: 181–210.

WALKER, I.C. 1977. *Clay tobacco-pipes, with particular reference to the Bristol industry*, Parks Canada.

Unpublished sources

CAMPBELL, R. McK. 1984. A first draft conservation management plan for the Roundhouse and Arthur Head, Fremantle City Council.

COLONIAL SECRETARY'S OFFICE correspondence, Battye Library, Perth.

McILROY, J. & MEREDITH, D. 1984. Bathers Bay 1984, Western Australian Museum.

O'CONNOR, S. & THOMSON, R. 1984. Report on an investigation into the Aboriginal heritage of the Arthur Head area, Fremantle, Fremantle City Council.

PEARSON, M. 1984. Report of an investigation into the historical archaeological resource within the Arthur Head area, Fremantle, Fremantle City Council.

Newspapers

Perth Gazette (P.G.)
Inquirer (I.)